

Abstract

The present invention relates to an injection nozzle (1) for an internal combustion engine, in particular in a motor vehicle. A first nozzle needle (3) controls at least one first injection opening (5). A second nozzle needle (4) controls at least one second injection opening (6). A control chamber (32) is connected via a throttle line (32) to a pressure chamber (34) in which it is possible to adjust the injection pressure. A first control piston (41) cooperates with a first needle unit (17) that includes the first nozzle needle (3) and the first control surface (43) of this first control piston (41) can be acted on by the control pressure prevailing in the control chamber (32). In the closed position of the first nozzle needle (3), there is an axial play (44) between the first control piston (41) and the first needle unit (17). A second control piston (42) cooperates with a second needle unit (30) that includes the second nozzle needle (4) and can be acted on with the control pressure on a second control surface (45). In a closed position of the second nozzle needle (4), the second control piston (42) rests against the second nozzle needle (4) on the second needle unit (30). At middle to high pressures in the pressure chamber (34), both nozzle needles (3, 4) can close quickly. With a rapid pressure increase in the pressure chamber (34), the second nozzle needle (4) can open quickly and the two nozzle needles (3, 4) can close quickly. With a relatively low to middle speed pressure increase in the pressure chamber (34), the second nozzle needle (4) does not open or only opens at a higher pressure.

(Fig. 1)